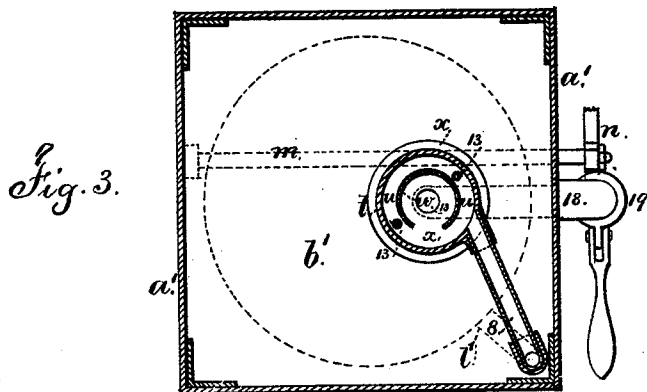
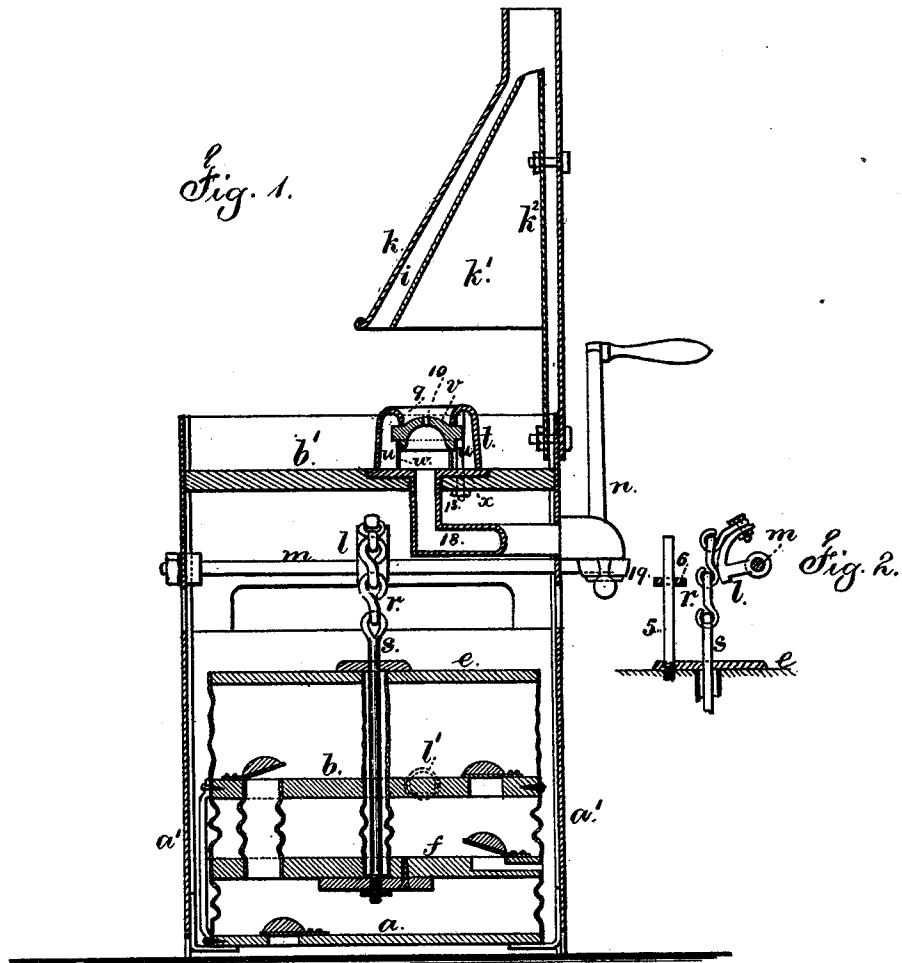


J. BAYLISS.
PORTABLE FORGE.

No. 175,326.

Patented March 28, 1876.



Witnesses

Chas. H. Smith
Harold Barrett

Inventor

John Bayliss.
per L. W. Lurell Att'y.

UNITED STATES PATENT OFFICE.

JOHN BAYLISS, OF NEW YORK, N. Y.

IMPROVEMENT IN PORTABLE FORGES.

Specification forming part of Letters Patent No. **175,326**, dated March 28, 1876; application filed September 23, 1875.

To all whom it may concern :

Be it known that I, JOHN BAYLISS, of the city and State of New York, have invented an Improvement in Portable Forges, of which the following is a specification :

In the base of the forge there is a double-acting bellows, similar to that patented by me August 3, 1875, No. 166,244, but it is actuated by a rock shaft and pulley-segment, to obtain a vertical movement to the central rod. The blast passes into a tuyere, that is constructed so that the blast becomes heated, and so that dust and ashes can be blown out laterally by a discharge-pipe. The hood at the back of and above the fire is made double, to form a circulating air chamber and protect the smith from the fire heat.

In the drawing, Figure 1 is a vertical section of the said forge complete. Fig. 2 is a section of the rock-shaft and segment, and Fig. 3 is a sectional plan of the blast-tuyere.

The base of the forge is preferably made as a square box, *a'*, upon which is the hearth *b'*, and within this box *a'* there is a cylindrical bellows, similar to that described in my aforesaid patent, with the followers *a* and *b* stationary, and the follower *f* weighted and actuated by the central rod *s*; but, instead of using a simple lever, I connect to the rod *s* a chain, *r*, that passes upon the pulley-segment *l*, mounted upon the rock-shaft *m*, that is actuated by the lever *n*, and the parts are positioned so that the chain and segment draw the rod *s* vertically up, and allow it to descend in actuating the bellows. This shaft *m* is below the hearth, in bearings upon the base of the forge, and the lever *n* is outside the base upon the end of such shaft.

Upon the moving top follower *e* there is a guide-rod, 5, passing through a bar, 6, to guide the said follower.

The blast from the nozzle *l'* passes by the pipe 8 to the cylinder *t*, that rises above the hearth *b'*, and has an inward-curved flange, 9, forming the top of the tuyere-iron, and inclosing an air-heating chamber, *n*.

The tuyere *v*, with its air-opening 10, is within the flange 9 of this cylinder *t*, and it rests upon a wrought-iron cylindrical segment, *w*, that is supported by the bottom

plate *x*, and the parts are secured together by bolts 13.

The cylindrical segment *w* serves to direct the air as it issues from the pipe 8, and cause it to pass almost entirely around the chamber *u* before passing into the central portion of the tuyere, and escaping through the opening therein to the fire. By this construction the tuyere-iron is kept cool by the blast, and the parts are simple and easily constructed or repaired.

There is a tube, 18, extending from the base-plate *x* to the outside of the forge, and at the end a valve or gate, 19, is fitted, which serves as a safety-valve to the bellows, and when opened allows the blast to discharge from the tuyere any ashes and particles that may fall into it.

The hood *k* is attached to the forge-body at the back, and it is of the usual character, except that within it is a false back, *k²*, and supplemental hood *k¹*, that is bolted into its place and produces an air and ventilating space, *i*, that lessens heat and radiation from the outer surface of the hood to the smith while blowing the fire.

I do not herein claim an air-chamber within a tuyere for heating the air before it passes into the fire, as the same has before been used, and may be seen in my Patents Nos. 68,939 and 56,879.

I claim as my invention—

1. The tuyere *v*, made with the air-opening 10, and supported upon the cylindrical segment *w*, in combination with the surrounding tuyere-iron *t* and inlet-pipe 8, as and for the purposes set forth.

2. The base *x*, connected with the pipe 18 and discharge-valve 19, in combination with the tuyere-iron *t*, tuyere *v*, and cylindrical segment *w*, as set forth.

3. The hood *k* of the portable forge, made with the secondary hood *k¹* and false back *k²*, as and for the purposes set forth.

Signed by me this 17th day of September, A. D. 1875.

JOHN BAYLISS.

Witnesses:

GEO. T. PINCKNEY,
GEO. D. WALKER.